CABY Integrated Regional Water Management Group
Proposition 84 2015 IRWM Round 3 Grant Solicitation

Attachment 3: Work Plan

Attached please find Work Summaries for all Proposal Projects including a separate project for overall Administration of the projects by Applicant.

CABY DAC WATER SUPPLY AND WATER QUALITY PROGRAM
ATTACHMENT 3: WORK SUMMARY
PROJECT 1: GRANT ADMINISTRATION
IMPLEMENTING AGENCY: THE SIERRA FUND

PROJECT DESCRIPTION: The CABY Regional Water Management Group authorized The Sierra Fund to act as the applicant and the grant manager for the Proposition 84, IRWM 2015 Grant. The Sierra Fund will administer these funds and respond to DWR's reporting and compliance requirements associated with the grant administration. This office will act in a coordination role: contracting with DWR, disseminating grant compliance information to the project managers responsible for implementing the projects contained in this agreement, obtaining and retaining evidence of compliance (e.g. CEQA/NEPA documents, reports, monitoring compliance documents, labor requirements, etc.), obtaining data for progress reports from individual project managers, assembling and submitting progress and completion reports to the State and coordinating all invoicing and payment of invoices. The Sierra Fund will also ensure that all data is collected, stored and disseminated according to CABY IRWM Plan standards and State requirements.

Budget Category (a) Direct Project Administration

Task 1: Agreement Administration: The Sierra Fund will respond to DWR's reporting and compliance requirements associated with the grant administration state requirements and will coordinate with the project managers responsible for implementing the projects contained in an agreement. This task also supports interim administrative tasks begun upon notification of award. This work includes participation in refinement of Agreement, development of internal controls and systems to support invoicing and reporting, and direct work with individual project sponsors to support their establishment of compatible reporting and invoicing systems. Work also includes ensuring compliance with requirements for statewide monitoring and data submittal.

Deliverables

- ❑ Executed Grant Agreement
- ❑ Data Reports as required by DWR agreement

Task 2: Invoicing: The Sierra Fund will be responsible for compiling invoices for submittal to DWR. This includes collecting invoice documentation from each project proponent and compiling the information into a DWR Invoice Packet, responding to DWR questions and acting as liaison between DWR and project proponents to finalize invoice details.

Deliverables

- ❑ Invoices and associated backup documentation

Task 3: Progress Reports and Completion Reports: The Sierra Fund will be responsible for compiling and submitting progress reports to DWR. The Sierra Fund will coordinate with project proponent staff to retain consultants as needed to prepare and submit progress reports and final project completion reports for each project as well as the grant completion reports.

Reports will meet generally accepted professional standards for technical reporting and the required terms of the contract with DWR as outlined in any agreement with DWR. For example, progress reports will explain the status of the project and will include the following information: summary of the work completed for the project during the reporting period; activities and milestones achieved; and accomplishments and any problems encountered in the performance of work. Project completion reports will include: documentation of actual work done, changes and amendments to each project, a final schedule showing actual progress v planned progress, and copies of final documents and reports generated during the project.

Deliverables

- ❑ Progress Reports
- ❑ Draft and Final Project Completion Report

CABY DAC WATER SUPPLY AND WATER QUALITY PROGRAM ATTACHMENT
ATTACHMENT 3: WORK SUMMARY
PROJECT 2: MEADE CANAL DAC PROJECT
IMPLEMENTING AGENCY: NEVADA IRRIGATION DISTRICT

PROJECT DESCRIPTION: The Nevada Irrigation District (NID) supplies water to nearly 25,000 homes, farms and businesses in Nevada and Placer Counties. NID uses over 400 miles of mostly open, earthen canals, many of which were built in the Gold Rush era, to transport water to customers. The estimated loss of water from these canals is between 10-20% due to evaporation, seepage and other factors.

NID has identified canal lining and/or encasement as a priority measure to reduce water losses from seepage, improving efficiency and increasing available water supply. NID prioritizes canal improvements on an annual basis and has prioritized the encasement of 3,000 linear feet of the Meade canal as an urgently needed improvement for both water supply and water quality reasons.

Where work will be done: The Meade canal is typical of many earthen canals in the CABY region. This canal is directly upstream of the Smartsville Water Treatment Facility and supplies water directly to the Smartsville DAC. 100% of the project directly affects this DAC.

The existing canal has many issues that need to be addressed:

- The existing soil conditions in this section of canal appear to ancient riverbed. The soil has a majority of cobble and sand and appears to have little cohesive soils. With these soil conditions, there is a strong likelihood of a high infiltration rate.
- The section of canal that will be encased faces due south. With this orientation, the canal is exposed to the sun throughout the day, which causes a high level of aquatic growth and a water quality issue at the water treatment plant.
- In addition to an aquatic growth issue, the canal runs through a cattle-grazing area. Currently, animals walk through the canal causing severe turbidity conditions and defecate in the canal causing large water quality and potential health issues. During a site visit on 6/23/15, NID staff chased away two calves, which were wading in the canal. The project will improve water quality by completely enclosing the canal thereby reducing contamination from grazing animals while also eliminating the problem of bank erosion, thereby reducing sedimentation while also eliminating algae growth.

What work will be done: This project entails encasing a 3,000-foot section of the Meade canal system in a ductile iron pipeline. The pipe will be installed in the existing canal and backfilled with native and/or imported material and will be tied into a pipeline that directly serves water from the canal to the Smartsville Water Treatment Plant. Several access ways will be installed along the alignment in order to gain entry into the pipeline for service and maintenance.

All design and construction work will be performed by NID engineering staff and crews who have experience of recent similar projects in the NID canal system. NID Administrative staff will provide administrative backup to the Project Engineer and Supervisor including ensuring all DWR required reporting and invoicing.

The Primary Benefits of this Project include:

1. Improved drinking water quality.
2. Conserved water supply.

Budget Category (a) Direct Project Administration

Task 1: Project Management: 5% complete

Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional grant manager, The Sierra Fund. Prepare invoices including relevant supporting documentation for submittal to DWR via The Sierra Fund. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies, and managing consultants/contractors. This task also includes Grant Application Preparation and Coordination, which started in June 2015 and will be completed by the application deadline of August 7, 2015.

Deliverables

- ❑ Environmental Information Form
- ❑ Financial Statements
- ❑ Invoices
- ❑ Other Applicable Project Deliverables

Task 2: Labor Compliance Program: 0% complete

NID will take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverable

- ❑ Proof of labor compliance upon request

Task 3: Reporting: 0% complete

Prepare progress reports detailing work completed during reporting period. Submit reports to The Sierra Fund for review and inclusion in a progress report to be submitted to DWR.

Prepare draft Final Project Completion Reports and submit to DWR via The Sierra Fund for DWR Project Manager's comment and review no later than 90 days after project completion. Prepare Final Report addressing The Sierra Fund's/DWR's comments. The report shall be prepared and presented in accordance with the provision of Exhibit G of the final contract.

Deliverables

- ❑ Quarterly Progress Reports
- ❑ Draft and Final Project Completion Report

Budget Category (b) Land Purchase/Easement

Task 4: Land/Easement Acquisition: 0% complete

There is no need to purchase additional land for this project. All work will be performed on canal and berm sections in which NID has a prescriptive right to complete the work. NID staff will arrange any needed temporary construction easements for access through neighboring landowners' property to the project site.

Budget Category (c) Planning/Design/Engineering/Environmental Documentation

Task 5: Feasibility Studies: % N/A

No Project Feasibility Studies are necessary for this work as this project is part of NID's rolling program to line or pipe all earthen canals.

Task 6 - CEQA Documentation: 0% complete

The work described in this section falls within the CEQA guidelines for categorical exemption. NID anticipates filing a

categorical exemption prior to starting the work for each year.

Deliverable

- ❑ Copy of Categorical Exemption

Task 7 - Permitting: 0% complete

NID staff will obtain any necessary permits, which could include project specific encroachment permits and any signed agreements with property owners, if applicable.

Deliverables

- ❑ Encroachment permits as applicable
- ❑ Signed agreements with landowners as applicable
- ❑ Stormwater Pollution Control Permit

Task 8 - Design: 0% complete

The project is a continuation of NID's existing canal lining and/or encasement efforts that are part of an ongoing examination of an overall canal system condition. NID engineering department will conduct a topographic survey of the canal and berm. This survey will be used to create a design for the new pipeline in the existing canal channel. NID engineering staff will prepare the final design, specifications, and engineering drawings. All construction and materials will conform to NID standard design and specifications.

Deliverables

- ❑ Updated Project Cost Estimate
- ❑ 100% Design Documents

Task 9 - Project Performance Monitoring Plan: 0% complete

Develop and submit a Project Performance Monitoring Plan. A brief Monitoring Plan has been designed for this grant but NID Engineering staff will develop a full Project Performance Monitoring Plan, which will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points.

Deliverable

- ❑ Project Performance Monitoring Plan

Budget Category (d) Construction/Implementation

Task 10 - Contract Services: 0% complete

All work will be carried out by qualified NID personnel. No contractors will be hired for this project. All work completed under this task entails ordering materials from suppliers. The materials will be purchased under an RFP process and awarded to the lowest responsible bidder. All Invoices will be available and shown to DWR.

Deliverables

- ❑ Advertising/Invitation for Bids
- ❑ Notice of Award to supplier

Task 11 - Construction Administration: 0% complete

All work will be observed, tracked and approved by an NID engineer including construction management, oversight and administration including on-site observations and inspections, conducting construction progress meetings and regular review of project status.

Deliverable

- ❑ Notice of Completion

Task 12 - Construction/Implementation Activities: 0% complete

Construction activities are outlined below:

12(a): Mobilization and Demobilization: **0% complete**

Prior to pipeline installation, access roads will be improved and entry points created to allow crews and equipment access to the canals. NID staff will develop appropriate staging area(s) within the project area for the temporary storage of the construction equipment and materials during the project. The site preparation will include removal and/or trimming of trees within the project alignment, pre-construction survey of existing property lines and easement limits, marking the project area for existing utilities (USA DIG Alert), All affected customers and the Smartsville WTP will be informed of any temporary outages. On completion of the project NID staff will dismantle the staging area and demobilize equipment from the site.

12(b): Site Preparation: 0% complete

Includes canal preparation, trenching, site restoration and inlet and outlet construction. Concrete work will include the inlet and outlet structure. Elevation stakes will be surveyed and placed for reference for the construction crew to use in preparing the canal for the pipeline installation. The canal will be prepared by reshaping the canal with off road construction equipment and hand tools to create an optimal depth, width and slope for the new pipe to be installed.

12(c): Canal Encasement Construction: 0% complete

The new pipe will be transported to the site, staged and installed in the prepared channel. Due to the existing soil conditions, a combination of native and imported soil will be used to backfill over the newly installed pipe and this material will be mechanically compacted in place to create a solid barrier over the pipe. Following the installation, the canal berm will be final graded and the site will be cleaned.

12(d): Improve/Cleanup: 0% complete NID staff will carry out all work needed to comply with the Stormwater Pollution Control Permit and any necessary erosion control measures will be put in place. Construction area will be cleared of all equipment, materials and debris. NID staff will return the site to pre-project conditions or better.

Deliverables

- ❑ Photographic documentation
- ❑ Engineers Certification

CABY DAC WATER SUPPLY AND WATER QUALITY PROGRAM
ATTACHMENT 3: WORK SUMMARY
PROJECT 3: DROUGHT REPONSE DISINFECTION BY-PRODUCT REDUCTION PROJECT
IMPLEMENTING AGENCY: PLACER COUNTY WATER AGENCY

PROJECT DESCRIPTION:
The Placer County Water Agency (PCWA) and its customers have successfully increased water conservation as a response to the ongoing statewide drought. However, this effective response has led to a paradoxical situation:

- The reduction in water use has increased temperatures and the disinfectant residence time within PCWA's water storage tank systems causing the levels of disinfection byproduct, specifically total trihalomethanes (TTHM), formation to approach, and in some cases exceed, the primary Maximum Contaminant Level (MCL) of 0.080 mg/L.
- In order to maintain water quality, PCWA has no alternative but to drain and refill the tanks on a monthly basis leading to a loss of 696 acre feet of water per year.

What work will be done: To reduce the TTHM levels in the water supply storage tanks and to stop the need for draining and refilling tanks, the project will include the installation of a tank mixer and ventilation system at seven tanks in PCWA's service area – specifically in the Auburn/Bowman and Colfax distribution systems. Installing a tank mixer and ventilation system provide a mixed condition in which the mixture of older and newer water has a higher blended disinfectant residual, which improves control of microbial re-growth, and minimizes disinfection byproduct formation by eliminating stratification. Tank mixers can also improve water quality freshness throughout a water tank. The tank mixer provides better conditions for more volatilization of TTHMs, while the ventilation system improves release of the volatilized TTHMs from the tank.

The work anticipated for the project includes the following:

1. Purchasing the tank mixers and ventilation systems.
2. Planning for the installation of the tank mixers at each of the tanks listed above considering water supply needs and timing of taking a tank off-line.
3. Installing the tank mixers and ventilation systems.
4. Demobilization Performance Testing of TTHM levels.

The primary benefits of this project include:

1. Improved regulatory compliance and drinking water quality.
2. Conserved water supply (by reducing the amount of water loss related to draining and filling of tanks which is needed to control TTHM levels in the absence of tank mixer and ventilation systems).

Where work will be done: PCWA will install the tank mixers and ventilation systems in the seven tanks listed below, at locations throughout its service area where disinfection byproducts are reaching unacceptable concentrations nd are in service areas identified as Disadvantage Communities (DAC). Three of the tanks have already had a mixer and ventilation system installed as noted below:

1. Colfax Clearwell Tank (1 MG), completed December 2014
2. Ball Park Tank (0.6 MG), completed December 2014
3. Colfax Clearwell Tank (0.3 MG), completed December 2014
4. Bowman Clearwell Tank (10 MG)
5. Bell Road Tank (1 MG)
6. Channel Hill Tank (1 MG)
7. Electric Street Tank (5 MG)

Budget Category (a) Direct Project Administration

Task 1: Project Management

1.01 Grant Application Preparation and Coordination: 100% complete

Prepare and submit supporting grant documents and coordinate with IRWM regional grant manager, The Sierra Fund.

1.02 Grant Agreement Coordination and Project Management: 0% complete

Manage grant agreement including compliance with grant requirements and coordination with IRWM regional grant manager, The Sierra Fund. Prepare invoices including relevant supporting documentation for submittal to DWR via The Sierra Fund. This task also includes administrative responsibilities associated with the project such as managing consultants and the contractor/vendor.

Deliverables

- ❑ Grant Application
- ❑ Financial Statements
- ❑ Invoices

Task 2: Labor Compliance Program: 0% complete

Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverable

- ❑ Proof of labor compliance upon request

Task 3: Reporting

3.01 Quarterly Progress Reports: 0% complete

Prepare quarterly progress reports detailing work completed during reporting period. Submit reports to The Sierra Fund for review and inclusion in a quarterly progress report to be submitted to DWR. It is assumed that ten quarterly reports will be prepared over the duration of the project.

3.02 Draft Project Completion Report: 0% complete

Prepare draft Final Project Completion Reports and submit to DWR via The Sierra Fund for DWR Project Manager's comment and review no later than 90 days after project completion.

3.03 Final Project Completion Report: 0% complete

Prepare Final Report addressing The Sierra Fund's/DWR's comments. The report shall be prepared and presented in accordance with the provision of Exhibit G of the final contract.

Deliverables

- ❑ Quarterly Progress Reports
- ❑ Draft and Final Project Completion Report

Budget Category (b) Land Purchase/Easement

Task 4: Land/Easement Acquisition: 0% complete N/A

There is no need to purchase additional land and/or obtain additional easements for this project as all activity takes place at existing PCWA facilities.

Budget Category (c) Planning/Design/Engineering/Environmental Documentation

Task 5: Feasibility Studies: 100% complete

Project Feasibility Studies were completed as part of the project development process. PCWA considered alternatives including adjusting chlorine feed rates, adding another chlorine injection port and tank draining and refilling, however, all these alternatives do not address the primary issue of increased residence time and stratification of water within the

tank systems and do not align with the goal of minimizing water loss. PCWA used preliminary water quality sampling (for Drinking Water Permit requirements) at the Colfax tanks to inform Feasibility Studies developed for remaining tanks. No further feasibility studies are necessary.

Deliverable

❑ Feasibility Studies

Task 6 - CEQA Documentation: 0% complete

PCWA anticipates the project will comply with CEQA and would file a Notice of Exemption. PCWA will file a Notice of Exemption for all seven tanks and does not expect this process to take longer than three months. CEQA documentation will be complete for all seven tanks in September 2015, prior to grant award. The Notice of Exemptions will be complete before the installation of the tank mixer and ventilation systems in the Auburn/Bowman system.

Deliverable

❑ Copy of Notice of Exemption

Task 7 - Permitting - Not applicable

There are no anticipated permitting requirements needed for the tank mixing and ventilation systems as project is taking place within existing PCWA infrastructure and at existing PCWA facilities.

Task 8 - Design (Project Phasing Plan): 10% complete

Design for the Colfax tanks is already complete. For the tanks in the Auburn/Bowman system, if the timing of the mixing system installation is not done strategically, the ability to deliver water to customers may be impacted. Other consequences could include loss of pressure or reduced flows. To mitigate these potential effects, the tank mixers and ventilation systems will be installed during months of low demand so that tanks can be taken out of service and not affect overall distribution system performance and water deliveries to customers.

PCWA will develop a project implementation/phasing plan for the installation of the tank mixing and ventilation systems in the existing tanks in the Auburn/Bowman distribution system identified below:

1. Bowman Tank (10 MG)
2. Bell Road Tank (1 MG)
3. Channel Hill Tank (1 MG)
4. Electric Street Tank (5 MG)

PCWA anticipates being able to install the tank mixing and ventilation systems in the four tanks above within a year and a half of grant approval.

Deliverable

❑ Project Phasing Plan

Task 9 - Project Performance Monitoring Plan: 0% complete

PCWA started to develop a basic Project Performance Monitoring Plan for this grant application in June 2015. The initial Project Performance Monitoring Plan will be completed by the grant application deadline of August 7, 2015 with modifications made by the beginning of 2016. PCWA is currently working on methods for monitoring performance at the tanks that have already had tank mixer and ventilation systems installed at three locations.

Deliverable

❑ Project Performance Monitoring Plan

Budget Category (d) Construction/Implementation

Task 10 - Contract Services: 10% complete

Activities necessary to award the contract include the sole-source award of a purchase and installation contract according to approved PCWA procedures. Colfax tanks already complete. PCWA plans to purchase the tank mixers from PAX Water Technologies and ventilation systems from Utility Service Group. The contract with Utility Service Group will also include installation of the tank mixers and ventilation system equipment.

Deliverable

- ❑ Award of purchase and installation contract

Task 11 - Construction/Implementation Administration: 28% complete

Construction/implementation administration involves PCWA's staff time coordinating with Utility Service Group during the installation of the tank mixers and ventilation systems.

Task 12 - Construction/Implementation Activities: 28% complete

Construction activities are outlined below.

12.01: Colfax 1MG Clearwell Site Preparation and Installation: 98% complete. Utility Service Group was contracted to install the tank mixer and ventilation system at the Colfax 1MG Clearwell. The specific equipment installed included the PAX Submersible Active Mixing system and PAX Power Vent. This installation was completed in December 2014. Once the grant is awarded, PCWA will conduct the first round of project performance TTHM tests at this clearwell to ensure that the equipment is working correctly.

12.02: Ballpark 0.6MG Tank Site Preparation and Installation: 98% complete: Utility Service Group was contracted to install the tank mixer and ventilation system at the Ballpark 0.6MG tank. The specific equipment installed included the PAX Submersible Active Mixing system and PAX Power Vent. This installation was completed in December 2014. Once the grant is awarded, PCWA will conduct the first round of project performance TTHM tests at this tank to ensure that the equipment is working correctly.

12.03: Colfax 0.3MG Clearwell Site Preparation and Installation: 97% complete: Utility Service Group was contracted to install the tank mixer and ventilation system at the Colfax 0.3MG Clearwell. The specific equipment installed included the PAX Submersible Active Mixing system and PAX Power Vent. This installation was completed in December 2014. Once the grant is awarded, PCWA will conduct the first round of project performance TTHM tests at this clearwell to ensure that the equipment is working correctly.

12.04: Bell Road 1 MG Tank Site Preparation and Installation: 0% complete: Utility Service Group will be contracted to install the tank mixer and ventilation system at the Bell Road 1 MG tank. The specific equipment proposed is the PAX Submersible Active Mixing system and PAX Power Vent. This installation is planned for completion in March 2016. After installation, PCWA will conduct the first quarter of project performance TTHM tests at this tank to ensure that the equipment is working correctly.

12.05: Channel Hill 1MG Tank Site Preparation and Installation: 0% complete: Utility Service Group will be contracted to install the tank mixer and ventilation system at the Channel Hill 1MG tank. The specific equipment proposed is the PAX Submersible Active Mixing system and PAX Power Vent. This installation is planned for completion in March 2016. After installation, PCWA will conduct the first quarter of project performance TTHM tests at this tank to ensure that the equipment is working correctly.

12.06: Bowman 10MG Clearwell Site Preparation and Installation: 0% complete: Utility Service Group will be contracted to install the tank mixer and ventilation system at the Bowman 10MG Clearwell. The specific equipment proposed is the PAX Submersible Active Mixing system and PAX Power Vent. This installation is planned for completion in March 2017. After installation, PCWA will conduct the first quarter of project performance TTHM tests at this clearwell to ensure that the equipment is working correctly.

12.07: Electric Street 5MG Tank Site Preparation and Installation: 0% complete: Utility Service Group will be contracted to install the tank mixer and ventilation system at the Electric Street 5MG tank. The specific equipment proposed is the

PAX Submersible Active Mixing system and PAX Power Vent. This installation is planned for completion in March 2017. After installation, PCWA will conduct the first quarter of project performance TTHM tests at this tank to ensure that the equipment is working correctly.

12.08: Demobilization - TTHM Testing. 0% complete: To document that the proposed project provides the anticipated water quality and regulatory compliance benefits and that equipment has been successfully installed, PCWA plans to monitor the TTHM concentrations on a quarterly schedule at each tank for one year following installation of the mixers and vents. This testing will be in addition to regular monitoring for Drinking Water Permitting (which is not included as a task or cost of this proposal). As part of the installation tasks, 12.01 through 12.07, PCWA will conduct the first quarter of performance testing. In this demobilization task, PCWA will conduct the remaining three quarters of performance testing. The first round of performance testing at the Colfax Tanks will occur during the same time as the testing for Bell Road and Channel Hill, anticipated testing in April 2016. The last three quarters of monitoring at the Colfax system tanks, Bell Road and Channel Hill tanks will begin July 2016. The last three quarters of monitoring at the Bowman and Electric Street tanks will begin July 2017.

These inspections will verify that performance of the mixers and vents work correctly. The mixer and vent performance tests will include sampling after a brief period of tank operation with the mixer/vent system 'off' to illustrate pre-mixer tank performance. PCWA owns a Parker TTHM Analyzer, which will be used by PCWA staff to monitor TTHM concentrations.

Deliverables

- ❑ Progress reports on Installation and Monitoring Completion
- ❑ Four quarters of TTHM Monitoring Data
- ❑ Photographic Documentation
- ❑ Engineers Certification